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Corynespora sinensis sp. nov. from Jiangxi, China

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ABSTRACT—A new asexual fungus, *Corynespora sinensis*, is described and illustrated. It was found on dead branches of unidentified plants in Jiangxi Province, China, and is characterized by its smooth ellipsoid, obclavate, or fusiform 3(–4) distoseptate conidia produced in simple chains of 2. A synopsis of *Corynespora* species described since 2010 is provided.

KEY WORDS—anamorphic fungi, *Corynesporaceae*, hyphomycetes, saprobes, taxonomy

Introduction

Corynespora Güssow, established by Güssow (1905), was emended by Wei (1950), who provided an historical review and described *C. cassiicola* (Berk. & M.A. Curtis) C.T. Wei [= *C. mazei* Güssow, the type species]. The genus is characterized by distinct conidiophores with monotretic integrated terminal determinate or percurrently extending conidiogenous cells that produce solitary (or rarely catenate) distoseptate phragmoconidia (Wei 1950, Ellis 1971, Seifert & al. 2011). Siboe & al. (1999) provided a synopsis of relevant morphological features that distinguish 50 accepted *Corynespora* species but did not include *C. kenyensis* Siboe & al. McKenzie (2010) subsequently published a synopsis of the main morphological features of 61 different species. Since then

27 additional species have been added to the genus (Index Fungorum 2019). However, *Corynespora cespitosa* (Ellis & Barthol.) M.B. Ellis (Ellis 1963), *C. endiandrae* Crous & Summerell (Crous & al. 2014), *C. leucadendri* Quaedvl. & al. (Quaedvlieg & al. 2013), and *C. olivacea* (Wallr.) M.B. Ellis (Ellis 1960) were accepted as *Helminthosporium* species by Voglmayr & Jaklitsch (2017) based on morphological and phylogenetic analyses. "*Corynespora aeria*" K. Swapna & N.N. Nair (Swapana & Nair 2015) and "*C. ipomoeae*" N. Verma & al. (Verma & al. 2014) are invalid (no identifier number cited; Turland & al. 2018: Art. F.5.1) and "*C. masseeana*" (Teng) P.M. Kirk (Kirk 2014) is also invalid (lacking a full and direct basionym reference; Turland & al. 2018: Art. 41.1).

During ongoing surveys of saprophytic microfungi associated with plant debris in southern China, an interesting hyphomycete with monotretic conidiogenous cells that produce smooth distoseptate ellipsoid, obclavate, or fusiform conidia in simple chains of 2 was collected on dead branches. Morphologically typical of *Corynespora,* the fungus differs from previously described taxa and therefore is proposed as new to science. With the addition of the new species, a synopsis of the main morphological features of *Corynespora* species described since McKenzie (2010) is presented in Table 1, following the same format as McKenzie.

Materials & methods

Dead branches were collected from humid environments and watersides in the forest ecosystems of southern China and placed in Ziploc™ plastic bags for transport to the laboratory, where they were processed and examined according to Ma & al. (2011). Microphotographs were prepared using a Nikon Eclipse E200 and SmartV550Dc digital camera, with a 100 × (oil immersion) objective. Conidia were measured at their widest point. The range between minimum and maximum values for microscopic measurements is given with outliers in parentheses. Adobe Photoshop 7.0 was used for image processing to assemble photographs into plates. The specimens are deposited in the Herbarium of Jiangxi Agricultural University, Plant Pathology (HJAUP), Nanchang, Jiangxi, China.

Taxonomy

Corynespora sinensis Jian Ma, X.G. Zhang & R.F. Castañeda, **sp. nov.** Fig. 1

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Differs from *Corynespora myrioneuronis* by its ellipsoid, obclavate or fusiform, wider conidia produced in simple chains of 2 by non-extending conidiogenous cells.

Type: China, Jiangxi Province, Jinggangshan Mountain, on dead branches of an unidentified broadleaf tree, 5 November 2014, J. Ma (**Holotype**, HJAUP M0156).

Etymology: referring to the country in which the fungus was collected.

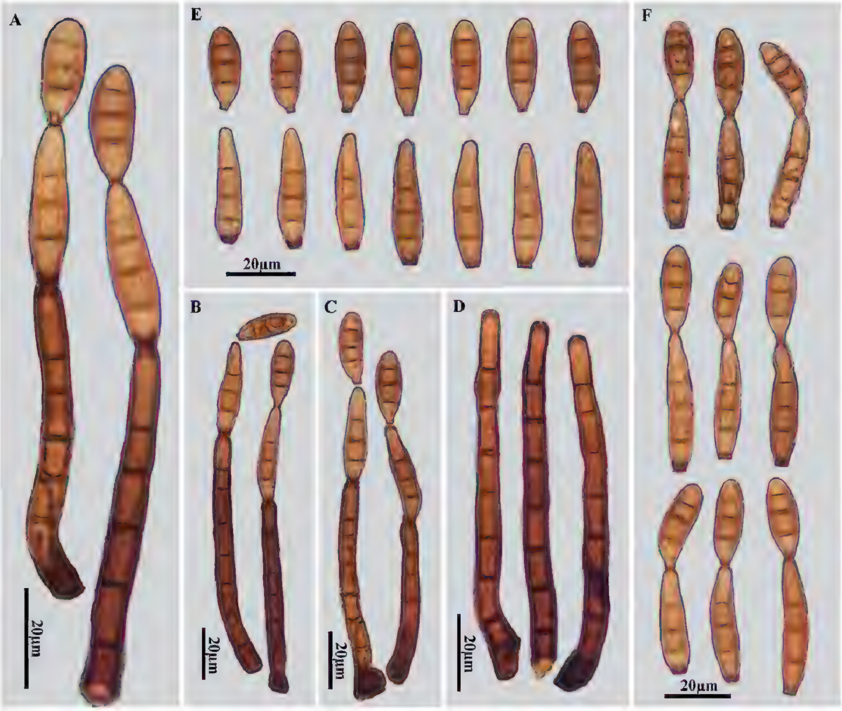

Fig. 1. *Corynespora sinensis* (holotype, HJAUP M0156).
A–C. Conidiophores, conidiogenous cells, and conidia; D. Conidiophores; E, F. Conidia.

Colonies on the natural substratum, effuse, dark brown. Mycelium partly superficial, partly immersed; hyphae branched, septate, pale brown, smooth-walled. Conidiophores macronematous, mononematous, unbranched, erect, straight or flexuous, cylindrical, smooth, brown to dark brown, 4–8-septate, 53–96.5 × 7–8.5 µm. Conidiogenous cells monotretic, integrated, terminal, determinate, cylindrical, brown, smooth, 11.5–18 × 6–7 µm. Conidial secession schizolytic. Conidia acrogenous, dry, in simple chains of 2, smooth-walled, brown; primary conidia obclavate or fusiform, 3(–4)-distoseptate, 31.5–42 × 8–9.5 µm, 5–6 µm diam. near the apex, 3.5–4.5 µm diam. at the truncate base; secondary conidia ellipsoid, 3-distoseptate, 21–28.5 × 8–9.5 µm, apex rounded, base truncate, 2.5–3 µm diam.

Additional specimens examined: CHINA, **Jiangxi Province**, **Jinggangshan Mountain**, on dead branches of an unidentified broadleaf tree, 5 November 2014, J. Ma (HJAUP M0168); **Lushan Mountain**, on dead branches of an unidentified broadleaf tree, 8 November 2014, J. Ma (HJAUP M0179).

Table 1. Major morphological features of *Corynespora* species described since McKenzie (2010)

Species	Conidia					Host/ substratum
	Production	Morphology	Colour	Size (µm)	Septation	
"*aeria*"	Solitary	Obclavate	Subhyaline to olivaceous	≤350 × 2–5	1–5	Air, India
annonacea	Solitary or catenate	Obclavate to obclavate-cylindrical	Subhyaline to olivaceous brown	25–135 × 10–18	1–10	*Annona squamosa*, India
bombacina	Solitary or catenate	Obclavate-cylindrical	Light olivaceous	45–180 × 10–16	5–15	*Bombax ceiba*, India
carrisae	Solitary	Obclavate-cylindrical	Olivaceous to very light brown	75–242 × 6–14	4–17	*Carissa spinarum*, India
celastri	Solitary	Obclavate to obclavate-cylindrical	Olivaceous to very light brown	55–120 × 8–15	7–17	*Celastrus paniculatus*, India
clerodendrigena	Solitary or catenate	Obclavate-cylindrical	Light olivaceous	60–220 × 16–22	3–13	*Clerodendrum viscosum*, India
encephalarti[2]	Solitary	Obclavate	Medium olivaceous brown	100–150 × 11–15	1–12	*Encephalartos*, South Africa
ficigena	Solitary	Obclavate-cylindrical	Light olivaceous brown	90–165 × 9–20	7–13	*Ficus religiosa*, India
fujianensis	Solitary	Obclavate	Brown	31–90 × 6.5–10	4–10	*Myrioneuron faberi*, China
holopteleicola	Solitary	Obclavate to obclavate-cylindrical	Olivaceous brown	33–148 × 5–20	0–11	*Holoptelea integrifolia*, India
"*ipomoeae*"	Solitary or catenate	Obclavate to cylindrical	Subhyaline to pale olivaceous	40–380 × 5–15	2–35	*Ipomoea obscura*, India
"*masseeana*"	Solitary	Elongate-obclavate	Pale olivaceous	80–120 × 18–20	7–11	*Helicteres*, India
moracearum	Solitary	Obclavate-cylindrical	Light olivaceous brown	27–163 × 12–20	5–16	*Ficus hispida*, India

palmicola	Solitary	Obclavate-subcylindrical	Pale brown	40–70 × 6–9	5–7	*Syagrus romanzoffiana*, Paraguay
peristrophicola	Solitary	Obclavate to obclavate-cylindrical	Olivaceous to very light brown	60–135 × 5–16	5–12	*Peristrophe bicalyculata*, India
pogostemonicola	Solitary	Obclavate to obclavate-cylindrical	Olivaceous to olivaceous brown	77–288 × 8–14	5–24	*Pogostemon plectranthoides*, India
pongamiicola	Solitary	Obclavate, ellipsoidal, clavate or club-shaped	Light olivaceous yellow	18–65.2 × 8–16.5	1–6	*Pongamia pinnata*, India
pseudocassiicola[2]	Solitary	Subcylindrical to obclavate	Medium brown	95–160 × 9–10	(4–)8–12 (–17)	*Byrsonima*, Colombia
sidae	Solitary	Obclavate to obclavate-cylindrical	Olivaceous to very light brown	25–220 × 7–17	2–24	*Sida acuta*, India
sinensis	Catenate	Obclavate or fusiform, ellipsoid	Brown	21–42 × 8–9.5	3(–4)	Dead branches, China
thailandica[2]	Mostly solitary	Obclavate	Brown	80–110 × 10–12	4–8	Wood, Thailand
thorii	Catenate	Subcylindrical, broadly ellipsoid to almost obovoid	Pale to medium olivaceous-brown	20–30 × 5–7	(0–)1(–3)	Thallus, apothecia of *Lecanora*, Japan
titarpaniensis[1]	Solitary	Obclavate-cylindrical	Olivaceous to light brown	50–340 × 5–20	5–35	*Lepidagathis*, India
tomenticola	Solitary	Cylindrical	Olivaceous to olivaceous brown	50–230 × 10.5–20.5	3–6	*Terminalia tomentosa*, India,
torulosa	Solitary	Clavate	Dark olivaceous	35–60 × 13–20	3–5	*Musa cavendishii*, Brazil and Mexico
tremae	Solitary	Obclavate to obclavate-cylindrical	Light brown to brown	50–160 × 4–12	5–20	*Trema orientalis*, India

[1] All conidiophores are mononematous and non-stromatic, except for *C. titarpaniensis,* which is stromatic.

[2] All conidia are smooth, except for *C. pseudocassiicola* and *C. thailandica*, which are finely roughened and *C. encephalarti* which are not indicated.

Comments—About 43 *Corynespora* species produce solitary or catenate conidia (Siboe & al. 1999, McKenzie 2010, Table 1), but *C. sinensis* can be distinguished from other species by the shape, size, and septation of its primary and secondary conidia. *Corynespora sinensis* is most similar to *C. myrioneuronis* Jian Ma & X.G. Zhang (Ma & Zhang 2007) in producing 3–4-distoseptate conidia, but *C. myrioneuronis* is characterized by solitary obclavate narrower (6.5–8 µm diam.) conidia on extending conidiogenous cells.

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